Industrial FINISHING

Reg. U. S. Pat. Office

Devoted to Product Finishing in the Factory

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Letters from Readers

OF INDUSTRIAL FINISHING

Editor's Note—These letters have been promptly answered and all of the inquiries have been referred to advertisers in the magazine. They are published here to indicate or suggest certain interesting trends of thought and activity in the industry, and to encourage further inquiries, comments and suggestions. The names and addresses of firms or individuals whose letters are published here may be had by writing to this office, or letters sent to them in care of this office will be forwarded at once.

Baking Enamel

We are desirous of learning the name and address of the manufacturer of a paint material for baking enamel. It is known as "Sans-Arb," or similarly sounding.—T. L. A. Co. (Sheet Steel and Brass Products).

"Sans-Arb" is a method of reproducing wood veneer and marble grain effects on metal and plain unfigured surfaces.

Perhaps you have in mind the bake finish known as "Syn-Por," a write-up of which appeared in Sept. 1934 issue of INDUSTRIAL FINISHING, page 41.—Ed.

Electric Polisher

In INDUSTRIAL FINISHING for May 1937, we notice an illustration of a portable electric Sander-Rubber-Polisher. We believe there would be a good market here for this, for furniture, as we have been handling a similar line, but heavier, manufactured in England with success.—F. & T. Co., Brisbane, Australia.

Waterproof Finish

We notice in your pages devoted to "Letters from Readers," that many companies have their problems solved by submitting them to you. With this idea in mind we thought possibly our problem could be solved also. We manufacture small fiber articles that we punch out of binder's board, and our problem is to waterproof these articles so they will not swell in hot or cold water. We certainly trust that you will be able to help us overcome our difficulty.—J. E. R.

Paint Measuring Meter

I noticed in your August issue, on page 48 an item about a "Paint Measuring Meter." As you do not, in your article, name the supplier of this apparatus I would appreciate it very much if you would forward such information to us. We are anxious of obtaining such a meter and would thank you for getting this to us at your earliest convenience.—A. A. Corp.

The meter is a product of the Buffalo Meter Co., Buffalo, N. Y.—Ed.

Flock Finish

We notice in your June issue (pages 19, 20 & 21) an article on flock spraying. Would you kindly communicate with some manufacturer or plant that could supply us with the gun and also the manufacturer of the flock material suitable for spraying on wood funeral caskets?

Our client is fitted with a complete spraying plant, compressor and guns, etc., but would like to add this equipment to his plant. We understand

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that a special gun is required and that the flock would require to be white, light blue and black, preferably cotton.

We would be grateful to have your assistance in this matter and could refer your advertisers to the English, Scottish and Australian Bank, Brisbane, for particulars of our financial position, through whom arrangements would be made for payment.—N. A. U. Ltd., Brisbane, AUSTRALIA.

Wrought Iron Furniture

In INDUSTRIAL FINISHING for August 1937, under "Letters from Readers" regarding "Finish for Wrought-Iron Furniture," (page 10) manufactured by L. F. N. Co., will you please include our name as a possible source for the material they desire? More information as regards their finishing possibilities will be necessary.—THE VARNISH PRODUCTS CO.

Kelsanite Coating

Will you please forward to us the name and address of the firm manufacturing the Kelsanite Liquid Rubber Coating for use in masking spray booths? We would like to contact this firm regarding their products.—S. Mchry. Co.

It's Kelsan Products Co., St. Clair, Mich.—Ed.

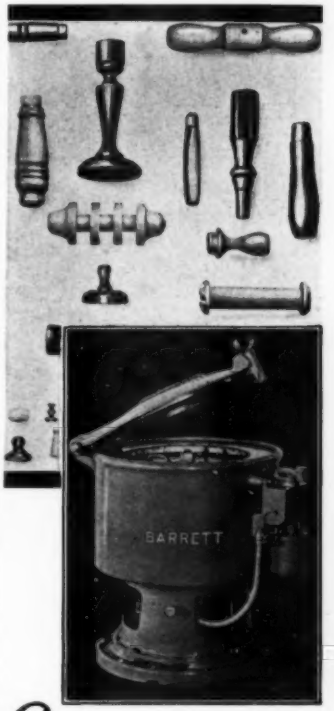
Copper Vault Finish

We have experienced some difficulty in getting the desired finish on our solid 10-gauge copper vaults. Because of the size, it has been impossible to get out all of the polishing marks, which has compelled us to add the copper bronze powder to the first lacquer coat in order to produce the hiding. We are desirous of getting the natural polished copper effect, which we are not getting by the above process. Have you any suggestions and recommendations?—N. A. Co.

Water-Proofs Canvas

In August issue, under the heading "Letters from Readers," the writer noticed an inquiry on page 8 for a waterproof compound for canvas. We have a compound that will make his tent or other canvas leak-proof and at the same time it is fireproof.

Please pass along to the anxious



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writer the sample of canvas so that he may satisfy himself that the compound is adapted to both of the purposes mentioned above.

It is usually sold in 100-gallon lots but to assist a person who is anxious to have a leak-proof canvas as well as to render the material fireproof, we will help him. The price for one gallon will be . . . . Just try and make it leak and try and make it burn.—I. A. P. Co.

Masking Tape

We are interested in learning the names and addresses of manufacturers of cloth and paper masking tape for both automotive and industrial purposes. We have many inquiries from our customers who are interested in contacting manufacturers of tape, and we would appreciate it, therefore, if you would supply us with the necessary information at your earliest convenience.—H. I. Co.

Flock Finish

We are interested in the finish known as "Flock". Will you kindly forward us the name of the manufacturer that supplies same?—U. O. Co. (Novelty Mfr.).

Tests That Fool You

The article "Test That Fool You," by W. T. Smith, in the July issue of INDUSTRIAL FINISHING, is indeed a good one. I look forward to additional articles on this subject.

For well over a decade my selling experience has been prolific in nonsensical reactions from a number of prospective customers.

In the first place—I have learned long ago that the average sample hound is as sincere in his desire to "test" a product as is his smelling ability able to discern the value thereof.

The evil of complying to the usual "brush-off" of "send me a sample" is the initial cause of distress in the selling field of finishing materials. It is well on a par with the manner in which many tests are made.

The unfortunate thing is that the tests conducted with these so-called remarkable testing devices, so often engineered by numb-skull analysists who pretend to make a "big show," is of no real value. I've had to laugh up my sleeve many times over the foolish reports received from some firms who, if they did test, gave me

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reasons that were destitute of ordinary good sense.—W. C. Freimuth.

Porcelain Enamel Repair

Please advise me what kind of paint to use to refinish the interiors of sinks and urinals on which the porcelain has become worn off. We do not have a baking oven or hot room. Also give the approximate drying time of the finish you recommend, before it can be put back into use.—L. K. H.

Spray Booth Liner

Back in a November 1930 issue of INDUSTRIAL FINISHING, I notice a brief article that refers to a cleaning compound which comes in powdered form for mixing with water, and which can be used for temporarily coating the interiors of spray booths. It turns snow white when it dries, and therefore makes the booth quite light. Also, unlike paper or grease, it offers no fire hazard. When this coating becomes loaded with overspray, it can be easily removed, and a new coating applied. Please give me the name and address of the manufacturer of this cleaning compound.—N. C. R.

EDITOR'S NOTE: The product referred to is made and sold by a well known manufacturer of metal cleaning compounds. The company's name and address have been supplied to the inquirer.

Brush Cleaner

In our shop, like in any other small fixture shop, we do painting, varnishing and general finishing. The hardest part of the finishing room management is to keep all brushes clean and in condition to finish every job properly.

It seems that the average finisher is not much interested in keeping the brushes in a good condition, but leaves them in whatever finishing material he happened to be working with before quitting time. Please let us know how paint, varnish, enamel, shellac and stain brushes should be kept clean, or in the best of shape for good work. Is there any design of efficient brush-keeper for this purpose?—E. Show Case & Fixture Co.

(Continued on page 61)

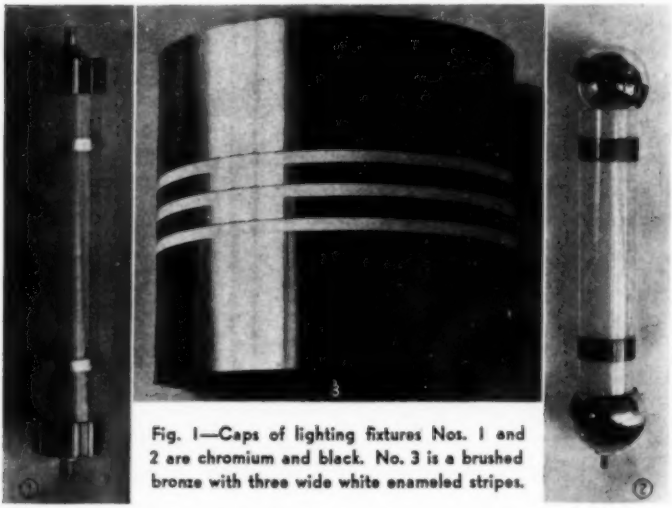


Fig. 1—Caps of lighting fixtures Nos. 1 and 2 are chromium and black. No. 3 is a brushed bronze with three wide white enameled stripes.

Decorative Treatment

ON METAL, AND HOW IT IS DONE BY SPRAYING

by August L. Medel

SOME UNUSUAL jobs of decorative finishing are found in the manufacture of certain modern styles of lighting fixtures. Part of the areas on some of these fixtures show brightly polished metal, while adjoining areas are in colored lacquer enamel, and lines of division between such areas must be sharp, clean-cut and accurate.

Take for example, the column light marked No. 1 in Fig. 1. Look at those fluted caps at the top and bottom of the light. These are chromium-plated, but the chromium plating shows only on the slender raised places; the remainder is in black lacquer enamel.

In the first place we know it is difficult if not impossible to spray lacquer enamel on polished chromium plating and make it adhere permanently, so in this case we begin by treating the caps with a special alkali solution until no "water breaks" will show on their

surfaces. After this treatment, an expert can distinguish the difference by the "feel" of the chromium-plated parts; they have a surface more suitable for receiving and holding the enamel, although their appearance is not harmed. The alkali solution is applied by d i p p i n g — by placing about 48 caps in a metal basket and dipping them into a tank containing the alkali solution.

When we are ready to spray these caps with black lacquer enamel we have about six specially made fixtures or holders like the one shown by the cross-sectional side view and end view marked Fig. 2. Projecting narrow blades fit closely over the raised surfaces of each cap and effectively shield these raised surfaces from being touched by the spray of black lacquer enamel.

Starting out with clean fixtures, one fixture can be used for spraying about 15 caps before it becomes so loaded with wet lacquer enamel that it must be cleaned to avoid smearing the shielded surfaces of some of the caps. The fixtures are cleaned by placing them in a container of lacquer thinner, letting them soak a few minutes, then brushing off the lacquer enamel and finally "blowing" them dry with an air gun.

Notice the spring plunger extending lengthwise through the handle of the fixture. This is for ejecting the cap after it has been sprayed. The fixtures are precision made devices—all made of steel parts except the handles, which are hardwood.

Striping the Chromium Balls

Let's turn our attention now to the ball-end column light marked No. 2 in Fig. 1. Surrounding each chromium-plated ball, at a rather snappy angle, is a black band of lacquer enamel. The edges must be clean-cut, the band must be placed just so on the ball, and all bands must be uniform in width.

A side view of the fixture, positioned and held in its circular holder, appears in Fig. 3. Study this a few minutes and I think you will understand it. Briefly, the ball is lightly clamped between the sharpened ends of accurately machined vertical tubes slightly smaller in diameter than the ball. The top tube contains a beveled plug which serves as a guide to press the flat open side of the ball to an angular position, so the stripe will be at an angle to it. In the short length of tube at the bottom, there is a flat ring or washer attached to three short spring-plunger rods. After the black band has been sprayed around the ball, and when the upper tube is lifted, this plunger automatically lifts the ball clear of the lower tube, so the workman can easily pick up the ball by placing his finger in its open-

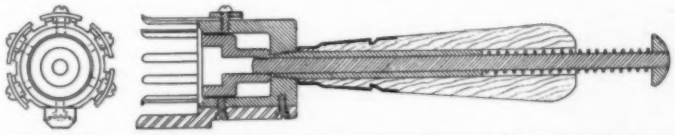


Fig. 2—Cross-sectional side view and end view of holder for the column-light caps shown in Fig. 1. Caps are held in this device while being sprayed with black enamel.

ing and lifting it out of the fixture. Before being sprayed, these chromium-plated balls are treated with an alkali bath, the same as the caps, mentioned previously.

Decorating No. 3, Fig. 1

In No. 3, Fig. 1, you see a large segment of cylinderically-shaped sheet bronze in a brushed-bronze finish, with three parallel white stripes, each stripe being 3/16-in. wide, with a space of ⅜-in. between adjoining stripes. This is a shield for a wall light, to direct

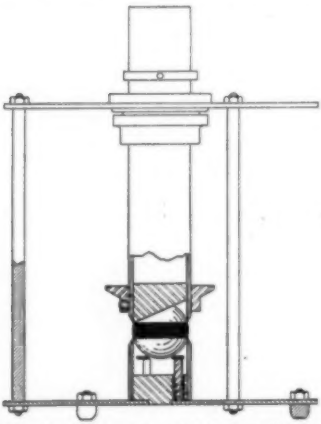


Fig. 3—Fixture in which ball-shaped caps (No. 2, Fig. 1) are placed so the black band can be sprayed around them.

the light down. Here is one job on which I tried to use masking tape, but it proved to be troublesome (the way I handled it) and required too much time.

Finally, I hit upon the idea of preparing dry enamel sheets, cutting them into strips and cementing them onto this bronze surface —and it worked satisfactorily and economically. The bronze surface, by the way, has very shallow grooves to receive the strips of enamel. It takes longer to tell how to do this than it does to actually do the work. However, here is the procedure:

Procure a piece of fuller board and cut it 2-in. longer than the length of the finished stripe of enamel. It can be any convenient width for easy handling. Examine it closely and make sure that the flat surface is perfectly smooth. This is what you are going to spray your white lacquer enamel on, to prepare dry sheets of enamel. But wait! This surface must be treated so that the lacquer will not adhere to it permanently; you will want to peel it off to use it. Apply shaving cream all over one side of the fuller board. When dry, apply shaving cream again. When this second application of shaving cream is thoroughly dry, spray the flat surface of fuller board with four thin coats of white lacquer enamel, allowing 20 minutes drying time after each spray coat. These four coats provide the necessary build-up for thickness.

This film of enamel must be cut clean and accurately into 3/16-in. widths. I use a pair of safety razor blades clamped to both sides of a piece of steel 3/16″ thick or wide, and use a steel straightedge as a guide. After the dry coat has been cut into a series of 3/16-in. strips these strips can be peeled off from the treated fuller board.

Before application of the white strips to the bronze lighting fixture, the bronze is given at least two coats of clear lacquer.

Lay the cut strips of white enamel on a blotter, with their sprayed sides up. Now mix some concentrated welding cement with

an equal amount of water. Mix no more than enough for one day's work. Brush the fresh cement onto the narrow strips of white enamel as they lie on the blotter. The blotter will absorb excess cement and thereby help you to do cleaner work.

For brushing on the cement, I use a No. 14 sign writer's brush, one made of red sable. I brush on two coats, one right after the other, leaving a little less than 1-in. at each end clean and dry to give finger room for handling the strips of dry enamel. Now start applying one white strip, holding one end with one hand and the other end with the other hand. Start at one end and press the strip tightly and firmly into position in the shallow groove that has been made to receive it.

As soon as you have the three parallel strips carefully cemented into position, quickly wash off all traces of cement with a water-wet sponge, as any cement left exposed on the lacquered bronze fixture will remove the lacquer. This washing also cleans off any traces of dry shaving cream that may have been lifted from the fuller board when the strips of enamel were peeled off. Trim off the projecting ends of the white strips, and your striping job is completed, with accurate, clean-cut stripes that will adhere permanently to the metal. With a little practice I can do everything necessary to lay three stripes on a lighting fixture in about eight minutes. After the striping job has been carefully cleaned, apply a top coat of clear lacquer to the entire fixture, stripe and all, to bring up the gloss.

Mall Tool Co. Announces Addition to Plant

The Mall Tool Co., (portable flexible shaft equipment) 7740 S. Chicago Ave., Chicago, Ill., announces that:

"We have recently made an addition to our plant to facilitate the handling of our orders, to step up production, and to improve the quality of our products."

The company has also issued a complete catalog (loose-leaf 8½x11-in.) which contains a number of new items of interest to industrial establishments.

New Printing Lacquer

A new printing lacquer, said to be of unusual flexibility and adhesion, has been placed on the market by H. V. Walker Co., Elizabeth, N. J.

The new lacquer is suitable for printing on rayon, and acetate silk, crepe rayon; also on oiled silk and pliofilm. It is available in black, white, aluminum and in colors.

Other features of this printing lacquer are its ease of application, and washability. For years there has been an increasing demand for a dependable and well tested printing lacquer for textiles; and the Walker Co. laboratories believe they have gone a long way toward meeting this requirement.

All-Purpose Hose Catalog

The Electric Hose & Rubber Co., Wilmington, Del., have just produced a new 64-page catalog of their complete line of braided and molded hose. This book has been carefully prepared for the convenience of the user. The data and helpful information is indexed according to "purpose" as well as kind of hose.

Sterling Sander Catalog

Announcement of a new catalog, illustrating and describing the Sterling Speed-Bloc Sander, is made by the Sterling Products Co., 2457 Woodward ave., Detroit, Mich. Embodying sixteen pages, the catalog gives complete facts concerning the mechanism, and various applications of the machine. Sent on request.

Paint & Lacquer Thinning

by E. A. Zahn
Works Laboratory, General Electric Co.

EXTREME CARE must be taken when thinning paint materials in order to produce the most satisfactory appearance and durability at the lowest possible cost. The thinning ratio varies with each type of gun, with each gun adjustment, and with each difference in air pressure. Due to these conditions, it is almost impossible to specify the exact thinning ratio to be used with any particular material unless one is entirely familiar with these conditions.

An operator who is considerate of material cost and appearance must necessarily adjust the thinning ratio to fit his equipment, but he should be furnished a chart giving him the approximate thinning ratio as set up by the laboratory. In cases of mass production, where all air pressures and all equipment is the same, the thinned material is furnished to each operator from another source, with very satisfactory results.

Some solvents have better thinning qualities than others and it is often found that the user of materials prefers the solvent which gives the thinnest material with the smallest thinner addition.

"False-Body" Paints

Sometimes paint materials are delivered with a "false body" for the purpose of preventing pigment settlement. In a case of this kind it is essential that extreme care should be taken to select a thinner that will not remove the feature which has been built into the paint. Otherwise, the settling of pigment while spraying will cause non-uniform results of gloss on the finished parts.

It is sometimes quite difficult to produce a paint film having a specified thickness. Very often the resulting film is of greater thickness than desired; in order to reduce this thickness, some manufacturers have resorted to the use of a solvent which will give a "false body" to the paint or lacquer, thereby necessitating a greater volume of thinner which, in turn, results in a dried film of less thickness than when a true solvent was used.

Method of Thinning

One method of thinning paints, where a variety of materials is used, has been found very satisfactory. The operator first mixes his paint, using the recommended ratios, and then proceeds to adjust the spray gun to give the best possible results. After this he adjusts the air pressure to improve the finish if possible. If an undesirable effect is produced such as orange peel, runs or incorrect film thickness, he repeats

this process after having remixed the paint to a different viscosity, depending on the results obtained with the first mixture. After one or two trials, an operator is able to tell exactly how much of a certain solvent should be added to each of his paints to give the most efficiency. He is, of course, expected to be familiar with the proper air pressures to be used on his final mixture.

An enormous amount of material waste is due to incorrect thinning of paints, yet there are very few general painting departments that have sufficient thinning data for use on their materials.

Thinners and paints are often combined by measuring cups. Some painters depend entirely on the use of hydrometers, but the best system is to make viscosity determinations with an approved instrument.

The painter who says he can tell by sticking a spatula in the paint, whether or not it is properly thinned, is never right and he seldom readjusts his first mix.

RUBBING CLOCK CASES

The view above shows men at work rubbing the clear lustrous finish on curved mahogany clock cases. Photograph by courtesy of the Sherwin-Williams Co.

Sprayed Fine Aluminum Closely Imitates Plated Metal

The Ed. C. Ballou Co., 255 W. 14th St., New York, N. Y., announces a product called "No. 450 Mesh Aluminum Powder," which is said to produce a real imitation plated finish. It gives a maximum of bulking value and for spraying purposes, only 3½ to 4-oz. of the aluminum powder are necessary to the gallon of bronzing liquid.

More Products Wrapped in Cellophane

The use of "Cellophane" transparent film for wrapping automobile tires has been adopted by a tire manufacturer. The current vogue of white side-wall tires has presented a serious problem to dealers in keeping the walls from becoming soiled in storage. The new method makes use of one layer of cellulose film beneath a double wrapping of the usual heavy paper, eliminating soilage in storage and transit.

Mixing Equipment Co's. Sales Conference

The annual sales conference of representatives of the Mixing Equipment Co. from the Northeastern Division was held on August 13 and 14 at the company plant in Rochester, N. Y., with more than a score of salesmen and executives in attendance.

One of the most interesting features of the meeting was a discussion by Mr. Bissell (Sales Manager) of mixing technology and viscosity measurements, and a demonstration of several of the smaller units manufactured by the firm. Paramount in interest, though, was the announcement by President Gordon of the new developments soon to be launched.

All salesmen in attendance at the meeting were enthusiastic in their comments regarding the present line of mixing equipment manufactured by the company and confident that the introduction of the new models would uncover still more laboratory and industrial uses for these mixers.

The Mixing Equipment Co. manufactures a complete line of mixing equipment for laboratory and industrial use in tanks and vats of all sizes. Their "Lightnin" mixers are said to be one of the most popular lines of mixers on the market.

Western Furniture Finishes

French Provincial bedroom suite in fruitwood finish. Head of bed is upholstered.

NEW FINISHES for the latest furniture fashions cast significant shadows at the Summer Market held the week of July 26 at the Los Angeles Furniture Mart. Reasons for this were the definitely better and more diversified finishes shown. Blond woods, though showing signs of diminishing in quantity, were still prevalent in the Hollywood Modern styles and to some degree in the modified 18th Century fashions.

The high style note in Modern was the "three-dimension finish" with iridescent glow. Maple and other hardwoods replaced softwoods in cabinet groups; walnut and mahogany in nut-brown finishes were stronger due to the swing to 18th Century English and French and Victorian; new warm finishes enhanced the beauty of Early California designs and Early American styles.

We noted a disappearance of antique glazed or novelty finishes which have given way to the clear treatments including walnut. The antiques and glazes were utilized more when the manufacturers used soft woods such as spruce and pine, but now that they have turned almost en masse to hardwood construction throughout, they find these former finishes inadequate for attractive effects.

Exhibited in Los Angeles

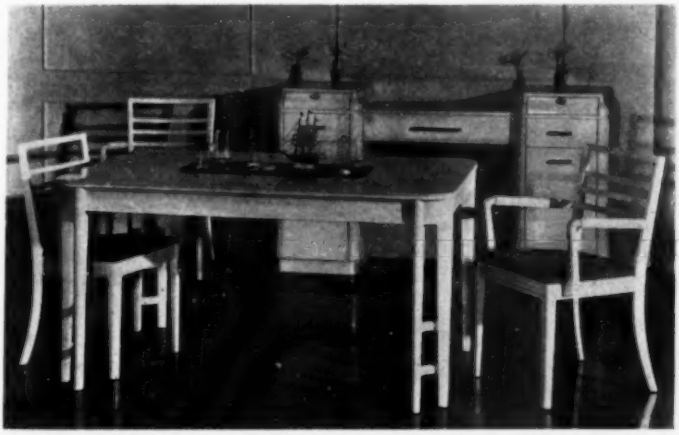
BY LILLIAN WINCHESTER AND ORRIE D. MAAL

Manufacturers of Early California designs have gone in for maple woods, applying warm maple treatments which are called briar, age poam, rawhide, and tanbark. For a blonder finish, one manufacturer has brought out a few ensembles in Yucca and in California gourd, both of which are light desert colors which take gracefully the application of handpainted decorations.

Almost every factory showed some maple in the satiny finishes in Early California, Western Colonial, and Modern.

The consumer demand for the Hollywood Modern in a higher and deeper finish—one which replaces the skimpy treatments—was probably responsible for the appearance of the finish which practically boasted a third dimension. Many manufacturers, it appears, have gone into the higher-priced lacquers and royalty materials to achieve this. On case goods of the bedroom variety, most of the samples possessed an extremely high finish obtained by a gloss varnish which had been power rubbed to a smooth sheen.

Photographs supplied by courtesy of Los Angeles Furniture Mart.



A modernized 18th Century design is used on this blond maple dining room suite.

In the bedroom lines there were ensembles in a satinwood finish with filler colored with gold bronze, giving the effect of a gold treatment. These ensembles were finished in a body varnish of high gloss — streamlined sides and fronts. Bleached walnut in combination with myrtle and oriental walnuts finished with a high gloss varnish were noted.

Among the dinettes, one in harewood appeared with a satin lacquer finish.

There was also an interesting tinted finish which made its bow at the market in Los Angeles. The manufacturers used a figured avodire and stained it with a violet spirit stain, after which it was sealed and finished in a slightly amber clear lacquer. The result was a finish of light grayish-brown color which, in certain lights, produces an iridescence.

Along this line there were several new suites in bedroom groupings with the iridescent finish in different shades. One used a pearl essence and added a minute quantity of very fine aluminum powder to the clear coats applied over blond or harewood stains. Some of the new Hollywood Modern sported these finishes over highly figured woods—such as fiddleback maple—and they were noted mostly in the higher-priced brackets.

Eighteenth Century English dining room groupings consisting of a combination of Chippendale and Duncan Phyfe styles in Old World Mahogany, in satin rubbed finish with crotch mahogany fronts, were also present. The same thing was prevalent in fruitwood in a Chateau finish. Birch was used as the foundation for this finish. There were also Colonial groupings in bedroom furniture in addition to Chinese Chippendale and Sheraton groupings in the fruitwood finish.

Victorian was again sponsored and though it did not have the strength of the 18th Century English it was still prevalent among upholstered pieces. French Provincial and some 18th Century French ensembles also flourished. As to woods used in general for these styles, mahogany maintained

Blond maple finish is used on the table and chairs, which are done in modified 18th Century manner. Crushed velvet in a coronation red is used as a covering for the upholstered chairs. The glass-top table has a cabinet concealed in the center.

A new Early California dining room ensemble in a Yucca finish, with hand-painted decorations and leather seats on the chairs. Shown by Wm. J. Jaeger Furn. Co.

its hold as the basic wood for the volume of merchandise with much of the Old World and antique finishes being utilized. There was some bleached mahogany, but most of it ran to the nut brown shades. Walnut in an Italian chestnut color and aged fruitwoods were very good. Some of the authentic 18th Century reproductions in solid walnut with hand carvings were noted among the new samples.

In the modified Eighteenth Century there was a prevalence of blond woods. These styles had been modernized to fit into the average home and were found to have almost a complete lack of detail such as characteristic flutings, carvings, and the finer upholpstery fabrics. For instance, an Empire sofa was executed in the lines of the originals of that period, but the wood surfaces were smooth in a highly polished blond finish and the upholstery was a sturdy embossed brocatelle with loose cushions at the arms and seat. It seemed made for comfort and for the middle-class American home. There was a sectional sofa which maintained the pleasing lines of a Chippendale piece, but used a diagonal striped damask and a blond wood finish for modernity.

In the Early English styles oak carried prestige, appearing in a fine medium dark finish.

Among manufacturers who make novelty merchandise, one brought out a number of bedroom ensembles in nautical design with pickled Ponderosa pine in heirloom finish. Ship's wheel motifs

were carried out in mirror frames, in decoratives used on all pieces, and the general design of the furniture is a rustic type.

A manufacturer of an outstanding line of outdoor furniture used the Ponderosa pine with oiled finish which is said to withstand the strong sunlight and climatic changes. The same manufacturer brought out a bedroom grouping for this market in a rubbed pine finish in a light tone. Wagon wheel drawer pulls were used.

Natural finished rattan in ensembles for every room including the bedroom was seen at the exhibition. In the case of domestic rattan, the bindings picked up the major color in the upholstery—accomplished by means of enamels. Narra wood tops were used on the tables in the imported rattan and a clear finish was noted.

Metal furniture did not show much change in finish. The regular lines of this type of furniture were painted in various outdoor colors with baked enamel finished and a large display of bentwood blond and painted frames for solarium use.

Bed springs boasted an aluminum and in some cases a gold finish for the market. The aluminum, manufacturers say, advanced in popularity because it does not scar so easily.

For the last several years radio cabinets have seemed to be about three years behind furniture in styling, but this market saw a difference. Radio cabinets went Modern — practically all walnut veneers with a few bleached models were shown. One particular model was outstanding with a Venetian blind effect below the sounding base.

High Mar-Resistant Finish for Brass and Silver

A product summary giving the properties of this clear, cellulose type, air-drying flexible lacquer (No. 4527) with high resistance to tarnish is offered by the Roxalin Flexible Lacquer Co., Inc., Elizabeth, N. J. The lacquer is available for spraying and dipping.

Finish, Design and Color on New Oil-Burning Furnace

The following news release from Maas & Waldstein Co., Graybar Bldg., New York, N. Y., reveals interesting information about the design, finish and color of the Spencer Co's. 1937 model domestic oil heater, which was recently cited as "The best design of the month" by ELECTRICAL MANUFACTURING. According to the company, this heater represents an interesting example of certain tendencies in modern product design.

"Mr. Gilbert Rohde, who designed the Spencer heater, studied the question of color carefully before selecting those to be used. Previously, Spencer heaters had been finished in bright reds and greens. These appealed strongly to buyers at first, but Mr. Rohde found that women are now asking for colors that give them more leeway in decorating basement rooms, and decided that those to be used must be less striking but no less attractive to women.

"He also decided that the colors used must be satisfactory under two very different sets of conditions—in the brightly illuminated show room and in the dimly lighted basement. Many colors that are attractive in bright light lose their character in the shadow, and this fact narrowed the range of choice still further.

"The problem was finally solved by a lustrous lacquer-enamel, Metalustre, in two shades of bluish-grey for the large areas of the heater, with certain details in strong red and in polished aluminum. The combination results in 'instantaneous, compelling, visual appeal', according to Robert Heller, industrial designer, who presented the heater for award.

"The finish used on the Spencer heater is not only attractive, but it also effectively protects the metal from corrosion. This is effected by using a baked synthetic primer under the finishing coat of metalustre. This type of primer aids in securing a good finish as it dries out of dust in five minutes and adheres strongly to the metal.

TECHNIQUE OF USING

Clear Lacquer on Metal

Some practical and informative details about the use of clear lacquers on bright metal products; how shop conditions contribute to successes and failures; the technique of dip-finishing and spray finishing; what to do for blushing, blooming and iridescence; how cleanliness, temperature and humidity affect final results; and what precautions to take for safety and economy of operations.

BY FRED MANNHARDT AND GREGGS PHILLIPS

EXTENSIVE quantities of clear lacquer are used by a number of industries to provide a transparent non-tarnishing protective coating over polished brass, copper and other bright metals. The success of their application and the extent of their durability depends upon many factors.

Whether applied by dip or spray, the first requirement in application is to have a clean and well equipped finishing room. The second requirement of having the work absolutely clean, right up to the moment of receiving the lacquer protective coat, is so closely allied to the first it is hard to draw a line of distinction.

Where a large volume of lacquering is being done, dust and moisture can spoil many pieces. Although the ever-present dust can be minimized by good housekeeping around the shop, it is nowhere near the evil that moisture is. Since escaping steam from radiators and jacketed heating units will increase the moisture in the room it is a good plan to have all escape valves discharge outside the room.

The sooner the prepared work is lacquered the better the results will be, so it is also well to have all hooks, rods, trays and other necessary tools handy and clean, ready for immediate use. Where the application is by dipping, extra precautions should be taken to guard against open flames and sparks, as the room is more apt to be full of inflammable lacquer vapor than where spray methods, which naturally discharge the vapors outside of the room, are used.

Clean Surfaces Necessary

The surfaces to be coated must be absolutely clean, particularly in regard to the slightest trace of grease and oil. There are many methods of cleaning but whatever

method is used, precautions should be taken to prevent the cleaned work from becoming contaminated before lacquering by even as much as a finger print of perspiration. Where solvent cleansing is employed it must be remembered that in time the solvent will become so saturated with grease or oil that it will no longer remove the final traces of grease on new work coming to the cleanser.

Technique of Better Dip Finishing

Since dip-work is more critical or "fussy", the lacquer, the work and the room should be at the same temperature — whether the parts are so few and small as to make it practical to dip them in a glass jar or so many and large to warrant a porcelain enameled or a tin-coated tank. Regardless of tank description the best work results from having the lacquer thinned to exactly the right consistency and, to safeguard yourself, it is best to use the thinner supplied by the lacquer manufacturer.

The amount of thinning depends on the shape and size of the article being lacquered, the rate at which the work is drawn out of the dip tank, temperature and other local characteristics. Inasmuch as a thin coating is better than a heavy one, time is well spent in knowing what you are going to do before you start with a large batch of work — rather than to fuss around adding more thinner or lacquer as may be necessary after part of the work has gone through.

In dip application the lacquer will be slower drying on some parts than on other parts of the same piece. This is because the coating is thinner on the surface nearest the hook, or the first part to leave the dip tank. A more uniformly thin coating, with more uniform drying over the entire article, can be obtained by allowing the excess of lacquer to drip back into the dip tank. This permits a better flow of the lacquer, which is quick drying, as the freshly lacquered work is suspended in an atmosphere rich with lacquer solvent vapors, thus cutting down the number of drips which otherwise might "freeze" into beads and later have to be removed.

In addition to improving the character of the work, arranging it so the dipped articles will drip back into the dip tank will effect a big saving in material. After dripping has stopped the lacquer coating will dry quickly and effectively in dry rooms heated anywhere from 85° to 100°F., or freshly coated work may be put into a force-drying chamber at about 125°F. While these lacquers will dry at lower temperatures much depends upon the kind of lacquer and type of work.

Blush; Bloom; Iridescence

Clear lacquers for this work are very liable to show a blush, a bloom, or an iridescence. The blush can be easily eliminated, as it is an indication that there is too much humidity in the air, but if it does seem permanent it can sometimes be removed by suspending the finished work in an atmosphere well saturated with lacquer thinner vapors. If this does not remove the blush the work will have to be handled as if it were a bloom which forms occasionally because of a trace of grease or oil. In all cases of blooming, or a permanent milky-appearing blush,

the work will have to be refinished after being stripped with lacquer thinner or solvent and recleaned prior to relacquering. If iridescent, redipping may help because the appearance is generally caused by too thin a coating, but if this does not clear it up the work will have to be stripped and redipped with the lacquer thickened up to such extent as the finisher's judgment may dictate.

Spray Application

Spray applications of clear lacquer are very common and give a more uniform application, with no drips to remove. While spraying does not by any means eliminate the necessity for the cleanliness precautions, some articles can be sprayed to better advantage than dip finished. Lacquer sprays on evenly all over and the sprayed work can be packed for shipment much sooner because the additional handling required in inspection for "heavy edges" and in removing "beads" from dipped work does not exist.

When the operator is through spraying, the gun should be cleaned out immediately to prevent it from becoming clogged with lacquer. If he intends to merely set the work aside and resume spraying about an hour later, he should remove the spray nozzle and set it in a can of lacquer thinner. This will keep the gun clean and ready for use without going to the trouble of cleaning the entire gun each time.

Quality work will result from cleanliness throughout the entire finishing operation . . . . and a cheap lacquer will generally produce a cheap job.

Further Comments

Editor's Note: Some added comments on the use of clear lacquers are given here by Mr. L. E. Dexter whose article about "Finishing Vanity Cases" appeared in August issue. Of course, Mr. Dexter is accustomed to finishing various items in the jewelry line where it is absolutely imperative that the bright metal parts be perfectly clean before any application of lacquer. He says:

"The surfaces should be run through a degreaser after being 'cut down' or 'grease buffed'; then the work goes back to the polishing room to be glossed with polishing compound (name on request); and back to coloring room. Run through degreaser, electric cleaner, hot water rinse, cold water, hot water, and dry in sawdust. The work should be wiped off and set outside the lacquer room. For wiping, we use a special wiping cloth (name on request). All flat polished brass work is wiped; then it is set up on screens and sprayed.

"Very small articles with fancy designs are wired on very thin wire, about 20 pieces to each wire, depending upon their size. Then these small pieces are run through the cleaning operations on the wire. After cleaning, the sawdust is blown off the surfaces and the work is sent to the lacquer room where it is dipped and dried. Then it is sent out to benches where it is taken off the wires.

"Some items, such as powder platforms for compacts, have to be sprayed one at a time on account of the hinged "door" in same. You can't possibly spray them on a screen, or dip them.

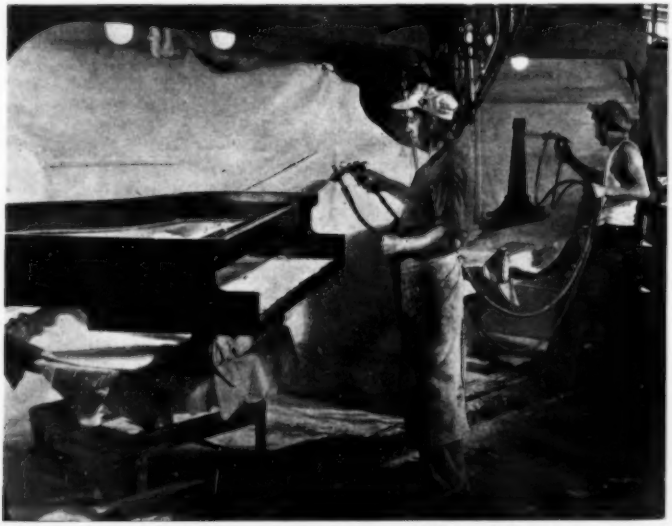
"We have automatic heat in our lacquer room, running from 85°

to 90°F. We seldom have to use ovens — only on very bad days. There's a difference in the drying time of about five minutes in favor of the oven, but you loose a lot of time walking back and forth, so we don't use the oven unless we really have to."

Soya-Bean Oil

PAINT PIGMENTS grind easily in soya-bean oil and it is particularly well adapted for the grinding of oil colors. When used in this manner soft pastes are obtainable which do not become hard on long standing, and they hold their original tints remarkably well. The amount of soya-bean oil introduced into a white-base paint as a result of the use of these colors is relatively small and does not affect the drying of the paint. Soya-bean oil can be blown in the same manner as linseed oil. When heated and blown at 500°F. for several hours soya-bean oil bleaches and thickens to a consistency desirable for baking japans. Besides being used in the paint industry it has also found a place in the linoleum and printing industries.

SPRAYING LACQUER ON GRAND PIANO CASES



Applying first coat of lacquer after staining and filling, followed by a period of drying. This coat is sanded with No. 5/0 sandpaper after four hours of drying, and is then followed by additional coats of lacquer and a final dull rubbing with No. 3-F pumice and oil. Photograph furnished by courtesy of Sherwin-Williams Co.

ECONOMICAL COVERAGE

BY SPRAY OR DIP

UTILITY Lacquer Enamel is so concentrated that it takes nearly an equal quantity of thinner. And it is low priced to begin with.

Because of long flow, it dips without streaking on long and unusually shaped articles. Sprays without orange peel.

Covers solidly. Adheres to wood or steel. Send for chart of colors with "sales appeal."

Thinners That Cut Quickly

The line includes a thinner for every use. Each one is moderately priced. Mention requirements for quotation.

JAMES B. DAY & CO.

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UTILITY

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Kindly mention INDUSTRIAL FINISHING when writing advertisers

LACQUER COATINGS FOR

Paper, Porous Surfaces

by Ray C. Martin
Finishing Consultant

A lacquer chemist explains some facts about using clear lacquers and lacquer emulsions on sheets of paper, cardboard and fiber by roll-coating, spraying, dipping.

DURING recent years considerable study has been devoted to the use and application of lacquer or pyroxylin coatings to porous surfaces. This study has been accentuated by the commercial availability of necessary cellulosic compounds, together with compatible volatile liquids which make up the desired film coating.

The available basic lacquer coatings for use on paper, cardboard, etc., are applicable to spraying, dipping and roller coating. They may be applied to package coverings, labels, wrappers, window and car cards and magazine covers. These coatings possess the distinct advantages of providing clear transparent films, high luster, and resistance to fats, acids and oils. Also, they withstand scuffing in shipping, will not darken light colors and, during coating operations, they will not stick together after application.

Chemical Formulation Important

In this coating development, the chemist plays an important part, as many variables enter into the picture. Certain types of paper coatings, which involve an emulsifying agent and volatile thinner selection, will indicate the part that proper selection of raw materials by the chemist will play—the stability of the mixture governing the selection of raw materials, and the fact that volatiles (liquids) especially influence this stability. The acidity generated by hydrolysis, through the improper selection of raw materials, will control the rate of life of lacquer emulsions.

The emulsifying agents used in these coating lacquers are very susceptible to contamination with foreign substances which tend to present an unstable compound, for example, water soluble salts from the paper. Other variables are the permeability of paper surface to an organic liquid and ever-present trouble arising from pigment and/or vehicle in the ink used for facing or printing.

A FINISH *that* THRILLS THE CROWD

A finish that thrills the crowd may be a good climax to any sports event or it may be the finish on a product . . . For there is no doubt that a well finished article is the one that attracts the most attention and produces the greatest sales . . . No matter how well made a product may be, if it hasn't eye-appeal it hasn't sales-appeal.

Egyptian Industrial Finishes—Lacquers, Synthetics, Paints and Varnishes—have been helping to keep thousands of nationally known products in the limelight these many years with finishes as modern as tomorrow.

The next time you are in the market for any type of finish we will be glad to have you call on us to discuss your requirements with you.

THE EGYPTIAN LACQUER MFG. CO.
LACQUERS • SYNTHETICS • PAINTS • VARNISHES
ROCKEFELLER CENTER NEW YORK, N.Y.

Two Types of Lacquer

The type of lacquer coating and method of application is of great importance. There are two general types: a) clear roller-coating lacquers, and b) emulsion types of lacquer coatings. The former is customarily applied by spray or roller-coating onto flat sheets, which may cut into labels, wrapping cards or covers. Various types and makes of coating machines are used. The lacquer must be reduced to proper applying consistency. This phase of application is very important. The volatile (thinner) content will evaporate as the lacquer is used in coating. The volume must be replaced in order to get desired film thickness, and to eliminate ridging.

After the flat sheets leave the rollers, they pass onto a conveyor which carries them through a drier at temperatures of 125° to 140°F. for periods of one to five minutes. The sheets are run the same distance after coating and before entering the drying chamber as they are after leaving the drying chamber. This permits leveling before entry and cooling after, and hence before stacking. The drying time can be adjusted so that the sheets may be stacked from the drier. Circulation of air in the drier is essential, hence proper ventilation is another important attribute. This type of coating lacquer is flexible and is resistant to grease, water, acids, alkalies, stains, etc.

Emulsion Type Lacquers

Emulsion type lacquers are customarily applied to heavy stock, cardboard, etc., and may be dipped, sprayed, or roller-coated. Emulsion lacquers are non-penetrating and are recommended for use over porous and water-absorbent surfaces, while the clear coating (type a) is penetrating and used over flat paper (glazed and semi-glazed) surfaces. Both types may, in like manner, be applied onto non-porous or previously surfaced structures. In this event, the general characteristics of formulation will change. The performance of these two type coatings are dependent on the liquids and surface to be coated.

These coatings are more costly than "spirit varnish type" coatings. However, they offer better appearance and longer life.

Success in roller-coating work is dependent on: 1) control of viscosity, 2) heat in tunnel, and 3) time before stacking.

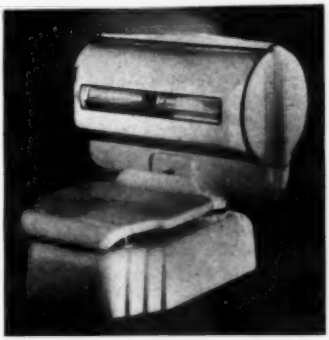
Definite Place for Soya-Bean Oil

IN the last two decades soya-bean oil has found a definite place in the modification of synthetic resins. These resins, principally of the glycerol phthalate and phenol formaldehyde type, require certain proportions of oil as a modifying agent to make them soluble in mineral thinners. In general the phenol formaldehyde type of soya-bean oil varnish is used as a mixing varnish. In glycerol phthalate resins soya-bean oil is used as a modifying agent for both air-dry and baking purposes.

Some makes of automobiles are finished with glycerol phthalate resins modified with China wood and soya-bean oils — the China wood giving the speed of drying and soya-bean oil supplying the plasticizing properties.

Product Design

BY FREDERICK D. BANNING
Chief Engineer with
Designers for Industry



This computing scale was designed by Designers for Industry, Inc., for the Steiner Products Division of Allied Store Utilities Company, St. Louis, Mo.

AS A MECHANICAL engineer of long experience in the design of a wide variety of products and production machinery, I have viewed with consuming interest the efforts now being made to make functional equipment of all kinds look attractive; to give them eye-appeal, sales appeal.

From observation and experience, I am definitely convinced that the job of imparting appearance-value to three-dimensional objects is beyond the ken of the engineer. It is a job for the artist, though obviously two-dimensional art and three-dimensional art are as far apart as the poles. In the early stages of endeavor to give functional products appearance values, many costly mistakes were made—for the simple reason that manufacturers and their sales departments failed to discriminate between smart attractive illustrations of proposed product improvement, as proposed in commercial art perspectives, and creative design that is part and parcel of three-dimensional expression.

Born of the failure of two-dimension expression to meet the requirements of product design, markets more or less glutted with functional things that would and did last a lifetime, along with the definitely expressed public preference for things that were smartly styled and attractive, the profession of industrial design came into the picture. This new science, for such it is, is based on the research, study and technological background of men who are best termed artist-technologists, individually and in coordinated effort.

Theirs is distinctly a new profession, bringing into the field of product design the technical knowledge of the engineer, the architect, and the commercial artist, and an analytical and inventive genius, each a specific quality and indispensable in successful product design and redesign.

With keen sensibilities as to human reaction to things smartly designed and attractive, they gave

full consideration not only to the art of imparting appearance value to functional things in mass production, but to the sales and merchandising qualities of those things. Minus sales appeal and consumer acceptance, their creations were worthless; just as valueless as the beautiful conceptions of things that did not satisfactorily function. And therein the industrial designer achieved success, for above all else he understood that *beauty of line and style must be subservient to the functionalism of a product.*

It is this responsibility that definitely distinguishes the industrial designer from the two-dimensional artist and the expert in applied design. To him pretty pictures mean nothing unless the manufactured product functions properly. Where the commercial artist concerns himself with color and perspective, the industrial designer gives serious study to the internal mechanics, materials, and the practicality of his creation from the standpoint of tooling, die costs and other production factors.

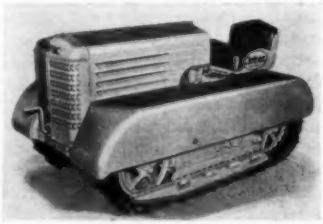
Creative Industrial Design

Creative industrial design is not merely imagination. It is practical thinking with specific objectives in view, based on purpose, form and color. And the professional man combines with his technical proposals the practical viewpoint of the business man who is seeking to hold or open new markets. After all, there is but one reason for manufacturing; it is selling.

Within the past decade manufacturers have become definitely conscious of the factor of eye-appeal as a potent selling force. They have withdrawn from their lethargy of the days of the machine age, when they professed a non-interest in eye-appeal qualities in their products. They have grown out of the wild era of "Modernistic" things, and are rapidly succumbing to the lure of practical smart, modern design as a means for building business.

People Have Become Beauty Conscious

Even now the products of creative-engineer-designing are becoming commonplace because manufacturers are beginning to exploit the fact that the American public in all walks of life, from the artisan to the chairman of the board, is definitely beauty conscious. The woodworker and the metal worker are lured by the streamlines of a new portable sander. The housewife is fascinated by the simple beauty, lightness of construction, and the ease of handling the new highly efficient vacuum cleaner. She willingly discards the old one that is out-of-date. The storekeeper gapes with amazement as he admires the streamlines of the new computing scales and, putting his



A rising activity in tractor sales began with introduction of streamlined models, according to Mr. W. King White, president of Cleveland Tractor Co., for whom this tractor was designed by Designers for Industry, Inc. Fenders on the tractor are for protection of trees and plants.

name on the dotted line, he is pleased that he is acquiring new equipment which is dependable and will add a modern note to his shop.

The wood chopping bowl is refined, given more graceful contour and finish, and immediately it graduates into a salad bowl that the hostess is proud to use and show. Coarse garden tools are graced with nicely designed handles and a touch of color; children get the old ones for playing in the sand. The dental waste receiver is converted from a round cylinder into a modern square type, and immediately sales increase at higher prices. Had not streamlining added a new note of grace and beauty to the automobile, the chances are that the sturdy substantial automobiles of '29 and '30 would still retard the desired production of 5,000,000 or 6,000,000 cars annually to maintain a healthy condition in the industry.

The changes being wrought by the magic of engineered-creative design are sustaining certain markets and opening new ones. The spirit of refinement and style is making new buyers. The varied objectives of industrial finishing are being conserved and promoted by the new science of industrial design. It is evolving a true contemporary American modern style based on the simple fundamental of engineering beauty into functional things of mass production.

So, as an engineer, I am pleased with the gentle revolution taking place. I envision greater opportunities for the engineer, for in combining technology and artistery, the doors of opportunity for greater achievement are again widely opened, with subsequent advantages and benefits to the producing and consuming public. Test creative-engineered design! What is your choice between two functional products performing an identical service; one that follows the conventional machine-line lines; the other smartly designed to please the eye? Your answer emphasizes the practicality, indispensability, and economic value of creative engineered design.

Death Takes H. Kahn

Information has been received that Mr. Herman Kahn, president of H. Kahn & Co., Philadelphia, passed away on Saturday, August 21. Mr. Kahn was well known in industry, having built up a wide acquaintance through the manufacture and distribution of bronze powders, etc. The company advises that business will be conducted as usual.

Brass and Silver Lacquer for Outdoor Exposure

A product summary giving the properties of this clear, cellulose type, air-drying flexible lacquer for resistance to wind and weather, Outdoor Lacquer No. 4917, is announced by the Roxalin Flexible Lacquer Co., Inc., Elizabeth, N. J. The material has unusual adhesion and high resistance to "spotting out."

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Indispensable to refinishers using Varnish and all Synthetic Enamels
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SANDPAPER
in the Finishing Room

by W. M. Torrence

The kinds and grades of abrasive paper that are now available and generally used for dry and wet sanding between applications of priming and intermediate coats of finishing materials... with suggestions about the cutting and use of sandpaper so as to get maximum in efficiency and economy.

▼ ▼ ▼ ▼

WE MIGHT well at the very outset confess our dissatisfaction at the word "sandpaper" as being technically inaccurate but, since it is generally accepted nomenclature for paper to which crystalline abrasives have been fixed, the term, in all its broader aspects, is so employed in the ensuing paragraphs.

The origin of this now indispensable adjunct to the woodworkers and finisher's supply list is by no means lost in antiquity, since the four basic patents covering its invention by Isaac Fischer of Springfield, Vermont, are dated June 14, 1834. We are told that it was first manufactured, on a commercial scale, near Philadelphia, Pa., about 1850.

While actual sand of some sort may have been used in the original forms, an inestimable amount of research and scientific development has been expended upon the abrasives in recent years with the result that a very few—four to be exact—distinct materials now compose the "grain" of our very efficient modern abrasive papers.

Since our discussion here pertains only to finishing-room practice, we may discard at once the "roll" paper used on woodworking machines, and the heavy-backed "cabinet" papers, and confine ourselves to the finishing grades of light-backed papers, supplied in standard 9x11-in. sheets in quires (24 sheets) or reams (480 sheets) and made only in the so-called "open coat" type, with reference to the spacing of abrasive particles.

Four Principal Abrasives

The grain of modern "sand" paper is now composed of four specific abrasives: flint (crushed quartz), garnet, aluminous oxide and silicon carbide. With the exception of the flint paper which has its own system of grading, all are graded and applied to a special strong-fiber manila paper back, the only variable throughout the grades and types being the two distinct forms of binder

Silk versus *Cotton*

Most women wear silk hosiery . . . . some wear cotton . . . . both kinds are stockings, leg coverings! One type enhances beauty, adds smartness and reflects quality . . . . the other does not! And so it is with finishing materials . . . . some enhance the beauty and eye appeal of a product . . . . others do not.

In order that products made of wood, metal and plastics may wear a finishing coat of the silk type rather than the cotton, we maintain a creative studio staffed by artists and expert finishers.

In this studio products are analyzed and attractive, sales-stimulating finishes created. The service has been very beneficial to many manufacturers . . . . we believe it would be helpful to you.

Will you write us regarding your finishing problems? There will be no obligation nor charge for our studio service.

No Tampering with Quality

ROCKFORD VARNISH CO.

ROCKFORD, ILLINOIS

employed to fix the grain to the paper.

Ordinary dry-back paper, like the conventional household sandpaper, has a dry paper back to the face of which the grain is attached by a film of animal glue. It is made in all the previously named abrasives and grades.

The "waterproof" papers employ the same backing but with a water-resistant lacquer-type binder which not only grips the grain effectively but impregnates the paper completely, giving it a semi-transparent, oily appearance. They are, as the name implies, water resistant to a high degree and are especially designed for wet sanding, being generally superior to dry-backed papers even for dry sanding. Their higher cost is usually justified in longer life and more efficient cutting.

Grades of Sandpaper

Abrasive papers are graded on two standard scales. Aluminous oxide and silicon carbide papers are graded by the mesh of the abrasive; garnet and flint by the /0 system. These scales are parellel and comparable and automatically transposing as shown below in the accompanying table.

Aluminous Oxide Silicon Carbide	Garnet	Flint
400	10/0	
320	9/0	
280	8/0	
240	7/0	5/0
220	6/0	4/0
		3/0
180	5/0	
150	4/0	2/0
120	3/0	

While the scale shown in the accompanying table does not embrace the coarser grades, it is considered ample in scope for any normal finishing room need. As will be observed, abrasive grain size may be selected in the desired type of abrasive without difficulty. For example, a No. 6/0 garnet paper is equivalent in particle "size" (but not necessarily in cutting efficiency for all purposes) with No. 220 aluminous oxide or silicon carbide, or No. 4/0 flint.

Flint Sandpaper

The so-called "flint" abrasive (probably the nearest approach to actual "sand" used on abrasive papers) is a crushed natural quartz. These papers are readily distinguished by their very pale yellowish color—the abrasive being white and tinted slightly by the yellow glue binder—and are the type commonly found in hardware and painter's supply shops and in the 5 & 10-cent store "household" packages. Since the efficiency of an abrasive is found not only in its hardness and in the virgin sharpness of the particles, but also in the nature of its failure under use (whether it cleaves sharply, leaving a keen edge or merely wears down or breaks in a less effective form of fracture) the flint papers do not enjoy great favor for industrial use. Not only is the crystalline particle lower in actual hardness than others, but the disintegration of the particle under use is not by a distinct cleavage but by "conchoidal" fracture—that is, having convex or concave elevations or depressions like half of a clam shell. This results in not only an inferior particle sharpness but also a rather rapid wearing down of the grain.

As indicated above, flint papers generally are not to be considered of great industrial value but, since they are used in some smaller shops, it is deemed advisable to

mention them here and to attempt to explain why they are not recommended for industrial use. Therefore they are dismissed (at least in so far as this writer is concerned) as being of value to the painter, carpenter, blacksmith, handyman and housewife, but unworthy of a place in the supply cabinet of the production furniture finisher.

Garnet Sandpaper

Garnet, the other naturally-formed abrasive, is a form of the well known jewel stone (various calcium alumino silicates) which originates mainly in Spain, India and the Adirondack Mountains of the U. S. It is characterized by its unmistakably typical garnet or reddish color. The particles are quite hard (second only to the manufactured grits to be described); also they are tough and practically free from normal tendencies toward fracture. The result is that the grain merely wears slowly down, with a gradual rounding off of the edges of the particle, so that the paper gradually becomes smoother until all practical cutting efficiency is lost. So great is the strength and toughness of this brasive, however, that it wears down slowly, and if the surface being abraded is of such nature that some effort may be made to free the grain of the paper occasionally of cuttings, excellent production is obtainable. Garnet paper is normally less expensive than the manufactured abrasive types, and is to be recommended conscientiously for any or all dry sanding.

Aluminous Oxide Paper

Aluminous oxide, a re-crystallized alumina, is made by fusing calcined bauxite or emery in an electric arc furnace with carbon electrodes. It has a bright brown color and is composed of exceedingly sharp and hard elongated particles. In hardness and actual sharpness of fracture, it is distinctly superior to garnet; and in actual tests it usually justifies its higher cost in longer life and greater actual "per sheet of paper" production. It is to this abrasive in particular that the new and exceedingly ingenious electrostatic coating process has been applied. In brief, a conveyor belt carrying the abrasive is passed over a highly charged negative electrode while the coated paper passes over a positive one about 1-in. above it. As a result, the elongated particles are electrically charged and polarized; they stand on end, like iron filings under a magnet, and leap up to imbed themselves base first in the abrasive coating. The result is an abrasive paper of very efficient nature, with particles all placed literally "on end" and very accurately spaced. Papers coated in this manner have been proven to offer an absolute maximum of life and efficiency. They are offered under various trade names by the leading manufacturers. Your sandpaper man will be glad to discuss them with you.

Silicon Carbide Paper

Silicon carbide, formed by fusion in an electric furnace of sand, crushed coke, sawdust, and salt is claimed to be the hardest known substance—exclusive of the diamond. It is invariably dark in color, ranging from practically black to various tints of purple and green.

Coupled with its extreme hardness is a logical measure of brittleness which results in a consist-

ent clean angular fracture of the grain particles. Under useage the wear on these particles takes the form of a splitting off of tiny portions of the grain, always leaving a new edge. As a result the sharpness and efficiency of a silicon carbide grain remains literally as long as there is any grain left on the paper, assuming that it is not clogged by cuttings of the abraded material.

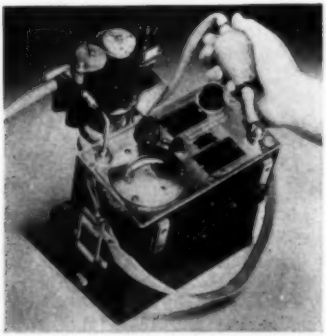
For sanding organic finishes, the principal merits of this paper are its very fast cutting and long life. Silicon carbide papers are made in both "waterproof" and dry back. Due to its introduction as a wet sanding agent in metal finishing work, silicon carbide paper is probably more commonly known as a "wet" paper.

(To be continued)

Detects Gas, Fumes

An instrument for use in detecting the presence of dangerous proportions of gas or fumes in the air is offered by the Linde Air Products Co., 205 E. 42nd St., New York, N. Y. The instrument has been developed for quickly and easily detecting explosive or irrespirable gas-air mixtures, and for determining hazardous conditions in various areas where these may prevail.

The UCC Gas Indicators are available in three models. The UCC Combustible Gas Indicator Model 12-B is for the detection of combustible gases or vapors. A graduated meter scale indicates by direct reading whether combustible gases are present, and, if they are, whether concentrations are above, within, or below explosive limits. For increasing the utility of this instrument, a flame-type safety lamp attachment is available which makes it additionally possible to detect oxygen deficiencies.



Affords a quick and accurate means for detecting explosive or irrespirable gas-air mixtures.

The UCC All-Service Indicator Model B-1 combines three units in one. It shows the presence of combustible gases, indicates an oxygen deficiency and, in addition, includes a toxic chamber for determining the presence of carbon monoxide and hydrogen sulphide in dangerously toxic concentrations.

Both the Combustible Gas Indicator and the All-Service Gas Indicator are equipped with a patented and exclusive air dilution valve. By means of this valve, incoming samples can be diluted with any volume of air, thus making it possible to detect flammable conditions which might not otherwise be indicated due to a lack of oxygen.

What's New...

Eternally United

永久的漆着

This is the way the Chinese say "Married". So, too, they refer to the enduring union between M & W Dykast Enamels and aluminum, zinc, and magnesium die castings.

DYKAST ENAMELS can be applied to clean die castings just as they come from the mold. No pretreatment is necessary. And they have the same drying properties as lacquer enamels.

They are tough, durable, strongly adhesive, and give a fine finish in a single air-drying coat. They are supplied in clear, black, white, and all colors, and in gloss or eggshell sheens. For dipping or spraying.

Maas and Waldstein Co. Newark N. J.

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Established 1876 — Producers of Lacquers and other Industrial Finishing Materials

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Better Products at Lower Cost Made Possible with Dykast Enamels

The manufacturer of a well known office device formerly used an expensive material for his product because of its handsome appearance.

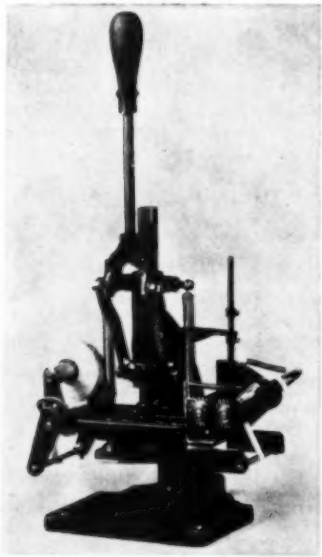
He discovered, however, that he could make an even finer looking product and reduce its cost of production by using zinc die castings and finishing them with Dykast Enamels.

He is no longer limited to a few colors, but may use any he desires, including attractive metal-and-color combinations.

Dykast Enamels can be applied directly to the bare surface of clean die castings without pretreatment, but pretreatment is desirable if the castings are coated with oxide.—Adv.

Embossing Machine

A machine for embossing gold leaf on wood, celluloid, leather, etc., is announced by Grimes & Harris Inc., (Mfrs. of celluloid and catalin working equipment) Leominster, Mass.



Embosses gold leaf on products.

According to the manufacturer, these machines are equipped with a 3-heat switch, two cartridge units, and will automatically feed the paper the desired amount up to 5-in. each stroke. The machine weighs about 60-lbs. and its base is 12x13-in.

Dielectric Enamel

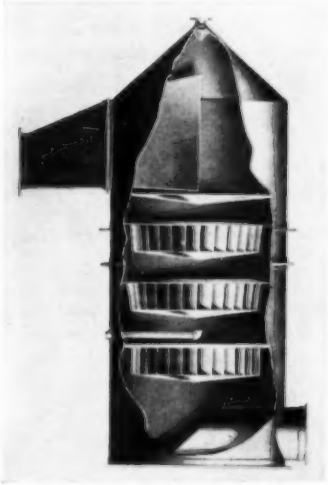
A new black enamel, with special dielectric properties, has been developed by Maas & Waldstein Co., makers of industrial finishes, Newark, N. J.

This new dielectric enamel is especially suitable for finishing electrical apparatus, such as steel switchboards and instrument panels, coils and radio bases. It dries to a rubber finish, and is tough, durable, and has high electrical resistance, according to the manufacturer. It is applied by spraying. A switchboard panel that has been marred or defaced can be easily refinished without dismantling, by spraying on another coat of the enamel.

A surfacer, with similar dielectric properties, is also supplied for preparing the surface to be finished with the enamel.

Air Cleaner

The Claude B. Schneible Co., 3951 Lawrence Ave., Chicago, Ill., is introducing the Junior multi-wash dust collector, which possesses the same major operating characteristics as the Senior multi-wash dust collector —except that dirty air, gases, or



Cut-away section shows interior.

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PRIMER AND SURFACER!

Save time—money—and give your product a better finish with B-O-X-X Primer and Surfacer! This high-speed undercoat even dries over grease—actually primes and surfaces in *one operation!*

Look at These Features!

B-O-X-X Surfacer and Primer gives the utmost in protection, for it possesses all the durability of an old time, slow-drying, long-oil finish! Yet B-O-X-X bakes in only 20 to 30 minutes and air-dries to recoat in 4 hours! It sprays smooth—saves sanding; can be used on wood or metal—indoors or out! Can you afford costlier, time-taking finishing methods? Investigate B-O-X-X Surfacer and Primer today! For complete details address:

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fumes are scrubbed five times by an impingement plate arrangement instead of 13 times as in the larger model.

Dust and fume-burdened air is drawn into the bottom of the tower. Heavier particles are immediately deposited in the sludge cone. The air is drawn upward through a turbulent spray of water, passing over two sets of impingement plates in its ascent which scrub the air, freeing it of the remainder of the dust, which is precipitated to the sludge cone at the bottom of the tower. Air is dewatered by an entrainment separator and discharged.

Sludge in the cone is pumped to a multi-louver dewatering tank where the water is drawn off and recirculated.

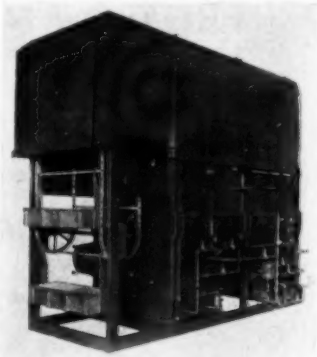
The manufacturer claims that there is nothing to rapidly wear or break in this simple, but effective, unit. There are no moving parts, no dead zones, no nozzles or spray tips—nothing to clog, freeze, adjust, lubricate or maintain.

Vapor-Spray-Vapor Detrex Degreaser

The Detroit Rex Products Co., Detroit, Mich., announces a completely automatic degreaser, which is shown in the accompanying illustration. It is used for the cleaning of miscellaneous metal stampings.

This machine is equipped with a 2-strand, cross-rod type conveyor arranged for loading and unloading at the same end. The work is placed in perforated baskets which are hung from the cross-rods of the conveyor. In passing through the degreaser, work is lowered into the hot solvent vapors which thoroughly wet the work and remove part of the heavy contamination. As the conveyor moves horizontally along the machine beneath the water jacket condenser, clean warm solvent is pressure-sprayed onto the work from banks of spray nozzles. This mechanical action forcibly removes and drives off the solids. A final cleaning in pure solvent vapors insures complete removal of oil and grease. Returning back overhead to the loading and unloading station, the work emerges clean, warm and dry—ready for subsequent finishing operations.

A vapor-actuated, air-operated control system, consisting of thermostat temperature indicator and valve, is used to regulate the heat input, control the height of the vapor column, and insure maximum operating economy. A self-actuated valve in the steam line which heats the clean solvent distillate controls the temperature of the hot solvent used for spraying.



Automatic Detrex Degreaser used for the cleaning of miscellaneous stampings and other metal parts prior to finishing or heat treating.

A water jacket condenser and a solvent collecting trough encircles the machine. The collecting trough is arranged so that the clean distillate can be made to flow into the spray sump at the end of the degreaser or into the clean solvent storage tank at the back of the machine. The solvent that drains from the work, as well as the over-flow from the clean solvent spray sump, flows back into the boiling sump.

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Grand Rapids Wood Finishing Co.
GRAND RAPIDS, MICHIGAN

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These have unusually high body, coupled with low viscosity, permitting a heavy application by spray; air dry to sand in 1½ hours, force dry at 125° for 20 minutes. They are ground finely and have phenomenal adhesion and resistance to moisture.

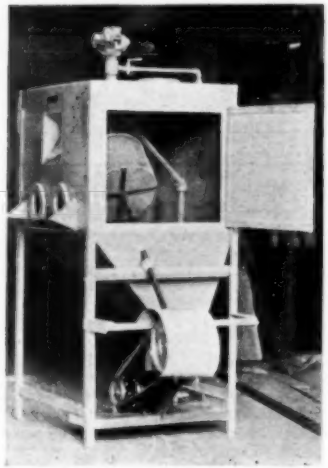
CEL-U-LAK Surfacers are standard in white, ivory, dark grey and red. They have for 6 years been an outstanding successful item in our line. We suggest you examine it for your requirements.

The
VARNISH PRODUCTS CO.
CLEVELAND, OHIO

The clean solvent storage tank is of sufficient capacity to hold all of the solvent from the machine during the distilling operation. In this way, the contamination is removed and solvent reclaimed for further use by distillation within the machine itself.

The rated production cleaning capacity of the degreaser shown here is approximately 3000-lbs. of work per hour at a normal conveyor speed of 6-ft. per min. The conveyor speeds can be increased to 12-ft., giving 6000-lbs. produced per hour. The overall dimensions of this unit are: approximately 13-ft. long, 7-ft. wide, and 11-ft. high. The solvent capacity is only 120 gallons.

AUTOMATIC SANDBLAST MACHINE



A cabinet-type, continuous-feed, automatic sandblast machine for cleaning small metal parts preparatory to the finishing operations. Parts are placed in a removable wire-mesh basket which is rotated in tilted position by the motor-driven shaft. The basket rotates under a sandblast nozzle pointing down from top of cabinet. Photograph by courtesy of Leiman Bros., Newark, N. J.

Automatic Bright Acid-Dip Machine

The first successful full-scale bright-dip machine was recently put in operation at the Belleville Base Works of the Westinghouse Electric & Mfg. Co's. Lamp Division. After experimentation over a 6-year period, during which two smaller machines were built and operated, the company announced that several months of successful, profitable, and safe operation of its fully automatic machine has proven its worth, and presented a substantial cash award to the inventor and designer, F. A. Newcombe, Belleville Factory Engineer.

The machine, about 40-ft. long, is completely glass-enclosed. It automatically dips baskets of brass shells in several successive acid dips, in a number of wash solutions, and in a lacquer-soap compound, delivering the work bright, lacquered and dry at the end of the sequence. Automatic control of acid concentrations and proportions, and of lacquer-soap solution concentration is maintained within close limits by the use of very sensitive hydrometer floats. This eliminates acid-handling and keeps concentrations more nearly exact than was possible by hand. Incorporation of the lacquer operation in the same machine does away with one handling and any possibility of spoilage of work by oxidation.

The capacity of the machine is 250,000 lamp bases per hour. The work turned out by the machine is much more uniform than can ever be hoped for in the manual process, because of automatic control of solutions to within ½° Baumé and to 0.05%.

The operators of the automatic machine wear neither gloves, apron, boots, nor goggles. They can dress in ordinary business suits. They are not exposed to splashing acid or alkali, or to fumes or steam. Duckboards and acid-proof flooring are no longer needed.

To Patch Wrinkle Finish

Editor's Note: This reply by Mr. Mannhardt came in too late to be included with others which appeared in August issue, pages 54 and 56.

I would say that a wrinkle finish can not be patched and have it look like the surrounding finish, as there is bound to be a difference of tone and wrinkle texture. About the best method I have ever tried is to spray a light mist coat of lacquer over the whole job. After the lacquer is thoroughly dry, spray over it with wrinkle enamel; put in the oven and bake. Care must be taken to avoid spraying too heavy a coat of lacquer on the surface, as this may soften the wrinkle.

Your question does not state whether it is a mar on the wrinkle finish, or whether it has just turned smooth and shiny in spots, as is often the case. I have found that most if not all of this smooth shiny effect is caused in the oven. Either the drafts are not properly regulated or the bake is started on too high a heat. In one shop which I visit there was considerable trouble in this line. I checked up on the oven and found the work going in at a 250°F. temperature; also, there was too much draft. We reduced the temperature to 150°F. and put in baffle plates every 10 or 15-ft. Result: No more trouble. (This was in a conveyor oven.) If the work is full of runs, the safest way is to remove the finish and start all over again.

If there is a mar on the wrinkle finish—say for instance, anywhere from the size of a 25-cent piece or larger—this spot can be smoothed down, and sprayed again. In this case, as I said before, the wrinkle will not match. The only thing that might help in this case is to spray a light coat of enamel or lacquer all over the job to give it an even tone or gloss.—FRED MANNHARDT.

Questions Answers

Comments on Questions

Relative to the question and answer about "Finish for Walnut Gun Stocks" (June issue, page 60) there seems to be little left for anyone to say after reading the instructive reply sent in by Mr. W. T. Smith. Please extend my thanks. However, if this is of any use to you, you are welcome to it:

A year ago the local representative of The E. L. Bruce Co., Memphis, Tenn., asked me to do the work of laying the special flooring made by this company. This flooring—which can be had in walnut, oak, maple and other woods, priced according to quality, selected, first and second grades—is made up in squares with two grooves in back, with a special metal strip in each which will expand or contract with the wood. The flooring blocks come all finished from the factory ready to lay—really the last thing to be done in construction of a home or building floor. The finish is beautiful and lasting and has a wax effect. As I understand it the

finish is pressed in and polished by a special process, which would be much along Mr. Smith's line of thought.

I am just wondering if a finish like this could be used for gun stocks. It's certainly attractive and durable.

In July issue, page 38, I notice a question about why mahogany tops have pinholes. I wonder if this company is using hot or cold water when water-sponging before sanding? I would suggest they try very hot water and put plenty of it on; then let the surface dry thoroughly. Then, after sanding, apply a good grade of filler. I am sure they should have no trouble.—GEO. D. WATT.

Testing Finishes

In July 1937 issue of INDUSTRIAL FINISHING, under the caption "Tests That Fool You and Tests That Are Really Practical", you give some very helpful information along the line I have been considering for some time.

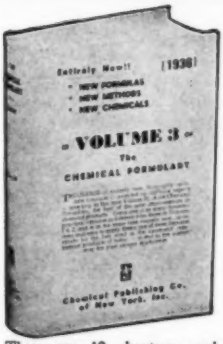
We are just now incorporating a testing laboratory in our finishing department and I believe you can give us valuable advice. We wish to include a salt-water-solution test, a 1% to 5% sodium hydroxide test and an infra-red ray test; also some practical abrasion testing equipment most of which will be used on enamels, such as coatings for license plates, road markers, etc.

To be specific, can you suggest a charted form to follow along this line which will give us satisfactory assurance relative to the durability we can expect from materials built for such purposes?

Also, what does your staff consider the most practical testing equiment which will enable us to arrive at a definite, yet simple and practical conclusion on these tests?—M.-H. Co. (Mfrs. Sheet Metal Products).

Your question in regard to the testing of materials rather constitutes a challenge when one considers the exact tenor of my article on that subject—or didn't I get it across? I should really much prefer that you read the second installment (in August issue) before I attempt to answer your inquiry.

I notice you want to make "salt-water-solution, sodium hydroxide, infra-red, and abrasion tests." My first impulsive reaction is "why?" Perhaps, in view of the products you mention you have to meet



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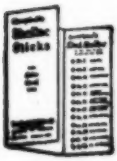
Government or State specifications—or are you faced with the necessity of giving employment to some young and enthusiastic graduate in chemistry?

In all sincerity, I cannot conscientiously recommend that a a moderate consumer of finishing materials assume the expense attendant to performing the tests you mention in a correct and logical manner. I should be much interested in learning just how you propose to interpret these test results in terms of service to your ultimate consumer.

In my article in July issue, I mentioned, I believe, "a telescope sight on a smooth bore musket". What coating method will your tester use to insure an absolutely uniform film thickness on all specimens to be compared? Without some such equipment, the fine discriminations supposedly to be drawn from the tests will be lost in the wide uncontrollable variable of film thickness.

In brief, if you wish to "go technical" in your tests, you must go "whole hog" and make your preparation of test specimens as accurate and discriminating as your final evaluations will be. If you intend to spray, brush, dip or roller-coat your specimens in a conventional manner, the only equipment you will require to answer all of your problems is a level-headed operator with a strong thumb nail, a machinist's ball-peen hammer, a few pieces of steel shafting or drill rod of various diameters, a machinist's bench vise, a small humidity cabinet, a small oven and some dry ice. Contrarily, on the technical side, you



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will require a coating device of the doctor blade or of the planetary spinner variety, tanks of cleaning solutions to standardize cleaning of specimens, air-conditioned chambers for control of flow and drying conditions, a sandblast abrasion tester, accurate scales, carbon or mercury arc-lamp weathering equipment, an accurately controlled refrigerator of ample temperature range, scratch and inpact tester, and a salt spray cabinet. The results, as pertains to the integrity of your finish and your value to the customer, will be approximately the same.

Assuming that all your finishes are for outdoor exposure, will they be nitrocellulose, synthetic or oil? All three or combinations of the former two? Will they be air-dried, forced or baked? If nitrocellulose is used, ultra-violet will be the most accurate destroying factor encountered.

On what material will these finishes be used? Cold-rolled or hot-rolled steel, cast iron, alloy castings, zinc, cadmium, or terne plate? Will you "Granodize", "Parkerize" or "pickle"? What cleaning equipment have you? Acid dip, alkali, soap wash, electroylitic, solvent wash, or vapor degreasing?

Aren't we here much in the position that an architect would be if I went to him and announced that I had a carload of lumber, sand, cement and shingles, and asked whether he recommended brass or copper pipe, metal or wood sash, or composition or cedar shingles? I rather suspect that he would want to know several things before committing himself, such as what I was building.

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Rubberized Fabrics—Flock Printing — Velour Paper — Moulded Plastics — Spray Gun Equipment (For Woods, Metals, Paper and Glass)

Let us help you develop or reproduce that special effect or color tone. Send us sample or description of what you need.

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Pioneer Manufacturers Since 1873

GRAINING PLATES

A wood grain finish places your product in the quality class.

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AMERICAN ELECTROTYPE COMPANY
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STENCIL

Lacquer Spraying to the Trade

Especially equipped to make stencils and spray lacquer on rounded as well as flat surfaces, we are in position to guarantee satisfactory work to concerns not in position to carry through this portion of the finishing process.

Our work includes stencil lacquer spraying on jewelry, buttons, buckles, radio dial pointers, small radios and dials, hardware, etc. Send samples and let us quote.

J. & R. Manufacturing Co.

69 Richmond Street, Providence, R. I.

A NEW INDUSTRIAL ALUMINUM PAINT

A quick air-drying (or bake) ready-mixed Aluminum Paint for production work on metal.

Easily sprayed . . . ideal for dipping . . . its smooth lustrous mirror-like finish is providing users with an easily applied finish that imitates a chrome electro plate job.

This product is finding wide use in the electrical goods, display signs, lamps, reflectors, novelties, toys and metal stamping industries.

Improve Your Product at a Saving—Write Today for Sample.

The Mitchell-Mayer Company, Inc.

ST. LOUIS, MO.

I wonder, therefore, what you are "building", and how and why? If you have a technical specification to meet and care to send me a copy of it, I can make definite recommendations with regard to the exact treatment necessary to perform the tests therein specified. If, on the other hand, you are merely conscientiously, and of your own volition, seeking to eliminate the guess work of production finishing—and a more worthy motive is rare—let me earnestly beg you to consider carefully just what returns you may actually realize on the rather startling expenditures essential to performing the tests you mention in a manner worthy of your time and trouble. Since only about one consumer in this country—to wit: Bell Laboratory of the A. T. & T. Corp. in New York—really goes into this finish business from so technical an angle, while having all the hundreds of thousands of dollars worth of equipment necessary to attain significant results, you are attempting an ambitious program.

By all means establish a test laboratory if you desire, but what I wonder is: What will a sodium hydroxide test, for example, tell you about the life of a road sign down in Williamson County under the ravages of the elements and stone-throwing of small boys.

I hope I have not disappointed you on this, but I feel strongly that so many people dive into this sort of thing because it sounds impressive and all the pretty gadgets look so majestic to visitors, while he that pays for it all is really getting little practical value for his money. Therefore, in all earnestness, I would really like to know, as indicated above, just why you want to make these

tests and whether you have any assurance of their actual value.

I shall be glad to submit an outline of simple pratical tests which will cover the situation when, of course, I am acquainted with all of the details of the equipment, material and actual durability requirements.

Do you think your work should endure for one year or ten years? Where? In Florida, Michigan or Arizona?

In conclusion I should perhaps apologize for what appears to be a "rave" rather than a coherent letter, but this happens to be one of my "pet phobias". Having thus unburdened myself without saying anything, I shall anticipate your advice on what you wish to do.—W. T. SMITH.

Letters from I. F. Readers

(Continued from page 11)

Stencil Screen for Letter Press

If you can, please give me the name and address of the company making the stencil screen chase for the Gordon letter press, as mentioned in November 1936 issue, "Stencil Screen Work in Production," by H. L. Hiett, page 18, first column.—O. T. Printing Co.

Luminous Paint

Will you kindly furnish the name of a manufacturer producing a finish called "Luminous". I am not sure if this finish will apply to both wood and metal, but am advised it is something new that can be applied to plugs used for fishing bait and will be luminous when used in the water at night. Will be very grateful to you for this information, or in the event that you are not familiar with this finish, would it be possible for you to refer me to someone who may know something about it?—R. E. T. (Mfg. Specialties).

EDITOR'S NOTE: One company, to

NEWCO No. 1
Machine Rubbing and Polishing Compound

Used by leading manufacturers for rubbing and polishing caskets, tile boards and all lacquer and varnish coatings. It burnishes the surface to a glass-like luster that will not cloud. Write for samples.

H. & N. COMPANY
1310 E. 14TH ST. CLEVELAND, O.

—KKPS—
Kwik Koting Pigment Stains

Are the only pigment stains having these characteristics:

1. Reduce with naphtha.
2. All shades of MAPLE, WALNUT and MAHOGANY.
3. Fast to lite, non-bleeding colors. May be striped or stenciled over if desired.
4. May be brushed, dipped or sprayed.
5. May be coated with sealing coat in one hour.
6. And have the lowest unit cost of any pigment stains on the market.

Request no charge sample (½ gal.) and complete information.

THOS. E. O'CONNOR CO.
410-416 Hart Street, Chicago, Ill.

Selling!

The new Crown No. 20 is selling because it gives a new and better kind of performance! New "Uni-Flo" spray head gives finer atomization, greater speed. Spray width adjustment in combination with pressure control ON THE GUN! One piece Fluid Needle Valve assembly instantly removable. Rugged, yet simple in construction; light weight; accurately balanced to eliminate fatigue. Write today for full details.

CROWN SPRAY GUN MFG. COMPANY

Warehouses in Principal Cities

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McALEER'S
Polishing Compounds
are made at
'Buffing Headquarters'
A PRODUCT FOR EVERY PROBLEM
Samples on Request
McALEER MANUFACTURING CO.
2431 Scotten Ave., Detroit, Mich.

whom this inquiry was referred, writes:

"Our company manufactures a radium luminous compound, which is principally used on watch and clock dials and hands, and aircraft instruments. It contains actual radium, which gives it permanent luminosity. The base of this material is a luminescent compound, which responds to activation by either natural or artificial light, but this effect will die out in 20 to 30 minutes, and it would therefore not be suitable for advertising purposes or outdoor displays, unless it contains actual radium.

"We can also put you in touch with a very attractive fluorescent compound which would be suitable for outdoor display, providing it can be activated with ultra-violet light.

"The radium luminous compound, if applied to large surfaces, might be too costly, but the other material would not be."

Oil-Fired Ovens

We would appreciate receiving a list of suppliers who could furnish an oven to meet the following requirements:

The oven is for a Neon Sign Shop and should use crude oil if possible, as there is no gas, and electricity is very expensive. The oven should be big enough to take a fender of an automobile and a metal desk. Full details and drawings with explanations regarding drafts and direct and indirect heating are required.—F. O. Corp.

Table Top Finish

In the July issue of INDUSTRIAL FINISHING, on page 11, the writer noticed a question headed, "Table-Top Finish?" We are manufacturers of tables and are interested in obtaining the answer to this very question—for use in connection with our line of tables, and will appreciate any information you may be able to give us.—A. T. Q. Co. (Store Fixtures; Restaurant Furniture).

We are interested in finding out the name of a material for use in producing so-called burnproof or cigarette-proof finishes for table tops and counter tops, and the name of the manufacturer. These finishes are claimed to be alcohol proof too.—E. E. Co. (Store Equipment).

Tack Rags

The writer has seen an advertisement in INDUSTRIAL FINISHING dur-

AN EXCELLENT GENERAL SOLVENT

Economical and Convenient to Use

SOLOX
U.S.I. PROPRIETARY SOLVENT
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Solox dissolves all spirit soluble gums for Shellacs, Shellac Substitutes and for Spirit Varnishes

U. S. INDUSTRIAL ALCOHOL CO.

60 EAST 42nd STREET
Branches and Warehouses in All Principal Cities

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NEW YORK, N. Y.
World's Largest Producer of Alcohol Solvents

ing the past few months concerning tack rags, but right now I am unable to locate this advertisement to find out who the advertiser is. Can you help me by return mail, as I would appreciate it?—I. A. Co. (Toys).

EDITOR'S NOTE: Evidently you have in mind "Magic" tack rags, which are advertised in August INDUSTRIAL FINISHING, page 65, by Wm. A. Juergens Co., 4040 Lagrange St., Toledo, Ohio.

Striping Wheels

Can you furnish us with information as to who manufactures striping wheels for putting stripes on drawer fronts? If you can tell us what these machines cost, it will also be appreciated.—H. Woodworking Co.

1000° Aluminum Paint

Referring to your issue of January 1937, page 58, will you please let me have the name and address of the firm supplying item No. 208, under the trade name of "Infernite"?—S. R. Laboratories.

EDITOR'S NOTE: This refers to an aluminum paint for metal surfaces that are subject to high temperatures. The manufacturer's name has been furnished to the inquirer.

New Stanley Book on Industrial Coatings

The Stanley Chemical Company of East Berlin, Conn., has recently issued an attractive book on industrial coatings. Through photographs and descriptive matter it takes the reader on a personal tour of the plant facilities and equipment. Starting with Research and Control Laboratories which are the "heart" of the business, the reader is taken step by step from the checking of raw materials, through the formulation of new coatings and on to the production department till the finished materials are ready for actual shipment. Thus the reader is able to absorb in a short time what would require several hours on an actual plant tour.

Extremely modern in its format and comparable to the quality magazines of today, even to the covers which are Stanley lacquered, it is one of the most interesting and complete publications of its kind.

A limited edition does not permit mailing of copies for general distribution. They will be delivered by the company's sales representatives.

Industrial FINISHING

Distributed to Executives and Foremen Finishers in industrial plants where finishing costs are applied with finishing equipment

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EDITORIAL

Color Highlights for Late Fall and Early Spring

Twelve color highlights . . . . for late Fall and early Spring have just been issued to members of the Textile Color Card Association.

Spotlighted in this new collection are important advance color notes for spring, as well as leading tendencies emphasized at the recent Paris openings. French Sapphire, for example, expresses the great favor for vibrant purplish blues, while Fuchsia Rose, a vivid cerise hue, also reflects this smart purplish influence. In the true purple family, Paris Violet strikes a new note.

A novelty tone expected to have strong fashion endorsement is the animated bluish green called Canard, meaning "duck" in French. Chantilly Green, a more subdued shade of slightly bluish undertone, also reveals a very new trend. Vintage Wine interprets the important Bordeaux gamme, which is receiving strong sponsorship here and in Paris.

A smart rendition in the terra cotta and capucine or nasturtium range is the lively Burnt Clay. Malabar Brown is a light tropical brown. Of lighter register are four more restrained tones which fit s m a r t l y into the advance spring line-up. These comprise the mellowed rose shade, Crushed Strawberry, a soft blue of violet undertone called Capri Blue, Beaten Gold, a rich old gold, and Woodmoss, a subtle mossy green.

Away With Makeshifts

We all know that makeshift tools, equipment and methods always lack something in performance, convenience and satisfaction. The only excuse for their existence and use is that they may serve temporarily for a special job or a hurry-up job—or for some routine work until proper equipment can be obtained and placed in service. We can safely say that usually the shorter the life of a makeshift, the better for everyone concerned. But s o m e manufacturers indulge in the very bad practice of placing too much dependence upon makeshifts. They

get accustomed to having their workmen use inadequate facilities and they purposely defer the repair, renewal or purchase of proper tools and equipment for doing work which they expect to be up to a high standard in quality and down to a minimum in cost. And still they hope the work will be performed with safety insofar as injury to workmen or danger of a fire in the plant is concerned.

Almost every reader of this magazine can call to mind some makeshift he has used or seen used and we believe everyone will agree there is little to recommend it, especially in production operations. If there is any expectation of permanence to the life and operation of a factory or factory department, the production equipment should be of best—not necessarily the most expensive and showy, but serviceable and reasonably uptodate so it can be depended upon to function regularly, satisfactorily and economically under all shop conditions.

The tools and equipment provided for workmen should not only be maintained in first class condition, but there should be provision for replacements from time to time as better devices become available. Products that sell must be improved to keep up with competition and progress, and naturally the facilities employed for making them and finishing them must also be improved.

Makeshift devices are often the cause, directly or indirectly, of various troubles and wastage that prevails in finishing rooms. Also, they provide excuses for troubles that sometimes are really traceable to carelessness or negligence on the part of certain workmen. Even the best paid workmen and

"MAGIC" TACK RAGS
IMPROVE YOUR FINISH 100%

MAGIC TACK RAGS remove specks, lint and sand particles--- bring out that deep, smooth luster, produce a faultless surface for white or colored finish. Why use "home made" tack rags when you can buy MAGIC TACK RAGS at trifling cost! They are tackier, do not dry--- are dust-proof and spontaneous combustion proof. Packed in dozen and gross lots or more. Made only by the

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A MASKING PASTE

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used in place of water to dissolve animal glue for
treating and two-plying crotches and gluing burls, butts and fancy veneers.
For Information Write
THE LIQUAFILL MFG. COMPANY
DAYTON, OHIO

sometimes the highest priced finishing materials may fail to produce satisfactory results when makeshift equipment and methods are used. Production costs go up and profits diminish or become losses because of these various makeshifts, therefore we say: Away with makeshifts at the earliest opportunity.

Gas Burner Safety Bulletin

Wheelco Instruments Co., 1933 So. Halsted St., Chicago, Ill., have just issued an 8-page bulletin on their new Model 1101 Flame-otrol, a gas-burner safety device designed to prevent explosion. This control instrument instantly shuts off the gas in case of flame failure. The bulletin contains many typical applications and construction diagrams. A copy of this bulletin will be sent you on request.

Commercial Solvents to Serve American Alcohol Customers

According to a recent announcement by William D. Ticknor, president of Commercial Solvents Corp., 230 Park ave., New York City, The American Distilling Co. and its affiliate have turned over to Commercial Solvents their entire industrial alcohol business, including goodwill, permits, and that part of their sales force specializing in industrial alcohol. Users of all forms of industrial alcohol in the manufacturing industry, who have heretofore been supplied by The American Distilling Co. or its affiliate, American Commercial Alcohol Corp., will be served from now on by Commercial Solvents Corporation.

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"We have used the Sterling Speed-Bloc Sander over an extensive period of time. The machine is used for the purpose of preparing refrigerator cabinets for spraying. We have found the machine economical in operation and that it will increase production to a great extent."

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"We purchased five or six of these machines about three months ago for use in rubbing console radio cabinets, and the use of the machine cut down the labor required considerably."

● **LOWER LABOR COSTS**

"Previous to getting this machine, we did our work by hand sanding and as nearly as can be determined, these machines are lowering our labor costs better than 50%. We have one of these machines in our plant in Canada and also one in the United States and we contemplate putting in more."

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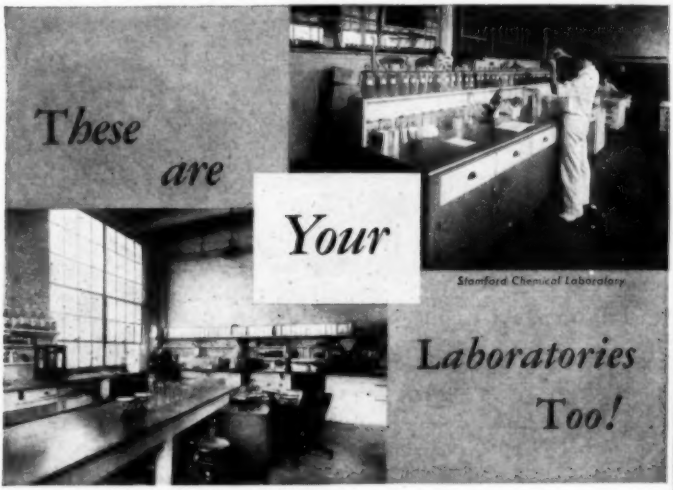

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